What is claimed is:

1.   An optimal operation controller of a plant comprising:

a correlation analyzing unit for obtaining correlation between a state of predetermined process and each element based on an operation status of

5   the plant to be controlled, storing the correlation in a correlation table, and computing operation efficiency for the each element based on the operation status of the plant;

a categorization efficiency table for storing the operation efficiency of the predetermined process computed by the correlation analyzing unit; and

10   an optimal pattern searching unit for referring to the categorization efficiency table based on a data input from the plant and outputting an instruction to control the each element.

2.   The optimal operation controller of the plant of claim 1, wherein:

the categorization efficiency table stores the operation efficiency for

15   an element and the operation efficiency of an entire plant, and

the optimal pattern searching unit controls the each element in consideration of the operation efficiency of the entire plant.

3.   The optimal operation controller of the plant of claim 1, wherein the correlation analyzing unit categorizes the correlation between the state of

20   the predetermined process and the each element into specific steps based on the data input from the plant to be controlled and writes the correlation in the correlation table.

4.   The optimal operation controller of the plant of claim 3, wherein the categorization efficiency table stores an approximated curve

25   generated by the categorized correlation, and

the optimal pattern searching unit outputs the instruction by referring to the approximated curve.

5. An optimal operation controlling method of a plant, comprising:

a correlation analyzing for obtaining correlation between a state of

5 predetermined process and each element based on an operation status of the plant to be controlled,

a storing the correlation obtained by the correlation analyzing step into a correlation table,

an efficiency computing for the each element based on the operation

10 status of the plant,

a storing the operation efficiency of the predetermined process obtained by the efficiency computing step into a categorization efficiency table, and

an optimal pattern searching for outputting an instruction to each

15 element by referring to the correlation table and the categorization efficiency table.